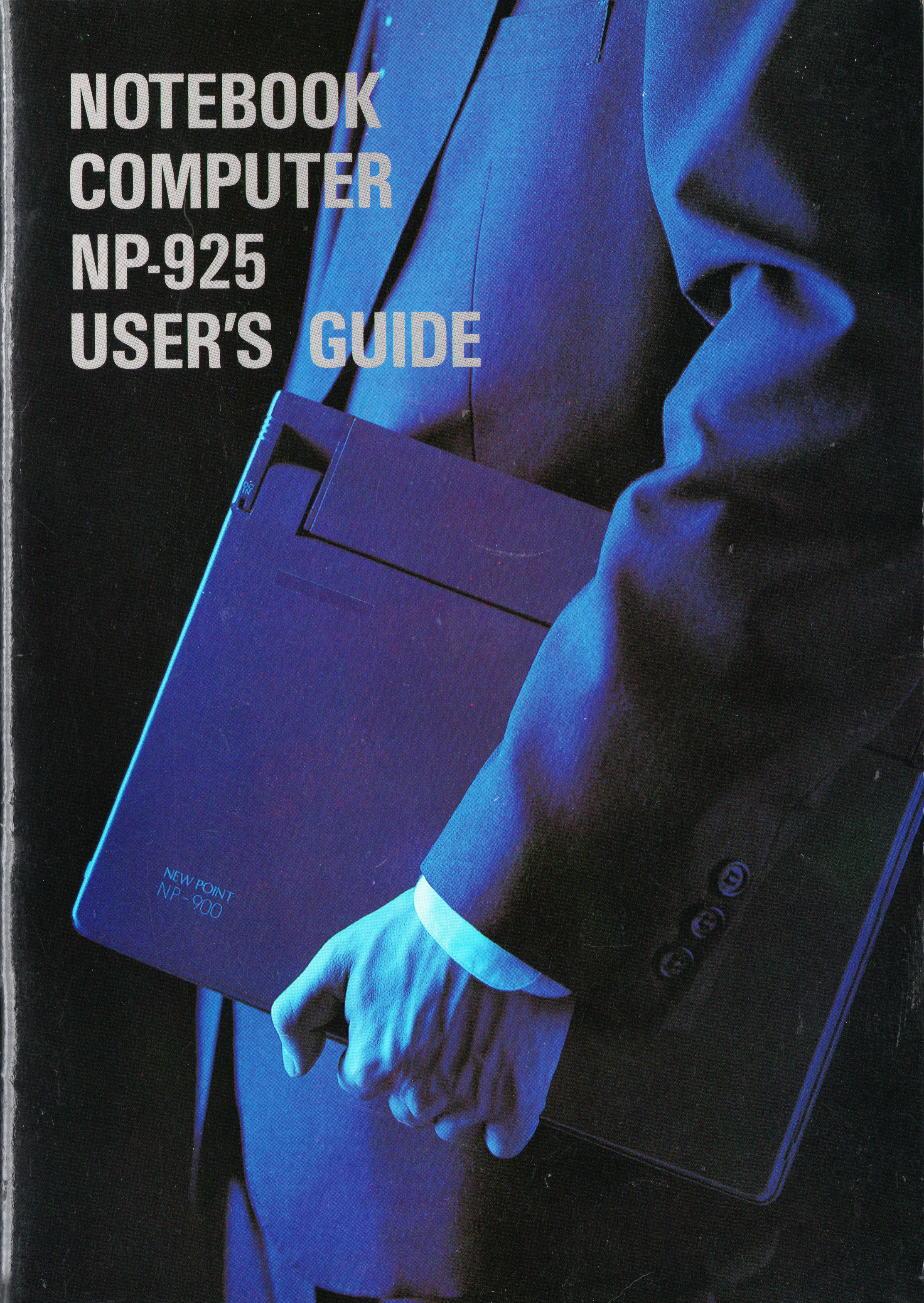
Doc. No.: 304-00052-00

NOTEBOOK
COMPUTER
NP-925
USER'S GUIDE



Notebook Computer

NP-925

User's Guide

Version 1.0

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FCC Notice

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Notice 1: Changes or modifications not expressly approved by The manufacturer could void the user's authority to operate the equipment.

Notice 2: Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits. Use of non-shielded cables may result in interference to TV and radio reception.

Notice 3: You must attach one factory-supplied noise filter core to the end of the AC adapter cable connected to this computer. Make sure that the cable makes one turn and goes through the core twice and that the noise filter core is properly snapped in place. Also, you must connect one core to the end of the CRT cable close to your computer. Failure to do this shall be the responsibility of the user if harmful electromagnetic interference occurs.

Important Safety Instructions

Battery Disposal Instruction

This product contains nickel-cadmium-cells. To protect the environment, disposal of a battery pack should be done in accordance with local regulations.

Dieses Gert enthlt Nickel-Cadmium-Akkus. Im Interesse des Umweltschutzes bitte nicht am Ende seiner Lebensdauer Mit dem Hausmll entsorgen. Eine Entsorgung kann ber eine Kundendienststelle oder entsprechende Sammelstellen - nach nationalen Vorschriften - erfolgen.

Power Supply Cord Installation Instruction

For units using a 240V source of supply, use only a UL listed Cord Set consisting of a minimum No. 18 AWG, Type SVT or SJT three-conductor cord, with a tandem blade, grounding type attachment plug rated 15A, 250V. The cord must have a minimum length of 6 feet and a maximum length of 15 feet.

Connecting to Power Outlet Instruction

Connect the Notebook PC near to a power outlet for safety reasons.

Die Fr diesen Notebook PC benutzte Steckdose muss nache dem Gert angebracht und leicht zugnglich sein.

Nur Mitgelieferten Adaptor Verwenden.

Shock Warning

Portable computers are designed to withstand normal handling and transporting, but as with any instrumental device excessive shock should be avoided. Handle your computer as you would a baby, carefully. Always lift your computer from the base. NEVER lift it from the screen. And always REMOVE batteries when shipping. The battery release clips are designed to withstand 3G of shock. Broken release clips indicate excessive shock has been applied to the computer and can void normal use warranty.

Grounding Instructions

1. An insulated conductor that is identical in size, insulation material and thickness to the grounded and ungrounded branch circuit supply conductors except that is green with or without one or more yellow stripes is to be installed as part of the branch circuit that supplies the unit or system.

2. The grounding conductor mentioned in Item A is to be grounded to earth at the service equipment or other acceptable building earth ground such as the building frame in the case of a highrise steel frame structure.

3. The attachment plug receptacles in the vicinity of the unit or system are all to be of a grounding type, and the grounding conductor serving these receptacles is to be connected to earth ground at the service equipment or other acceptable building earth ground such as the building frame in the case of a highrise steel frame structure.

Contents

Chapter 1 Hardware Description

1-1 Physical Appearance
1-2 LCD Display Panel
    1-2 Resolution
    1-2 Screen Angle
    1-2 Backlight
    1-2 Brightness Control
    1-2 Contrast Control
1-3 The Battery Pack Latches
1-3 The Keyboard
    1-4 Keyboard Layout
    1-4 Special Key Combinations
1-5 Indicators
1-7 The Left Panel
1-8 The Right Panel
1-9 The Rear Panel

Chapter 2 Getting Started

2-1 Unpacking
2-2 Setting Up the System
2-3 Formatting the Fixed Disk
2-7 Connecting the AC Adapter
2-9 Running Programs on the Computer

Chapter 3 Modifying Values of the Setup Program

3-1 When to Run Setup
3-2 Displaying the Setup Main Menu
3-3 Setting the Disk Drives

Chapter 4 Power Management and Utilities

4-1 Charging the Battery
4-2 Low (Weak) Battery Conditions
4-4 Power Management
- 4-4 LCD Backlight
- 4-4 Hard Disk Drive
- 4-4 Keyboard

4-5 Utilities
- 4-5 Loading the Utilities
- 4-5 The SETMODE Utility
- 4-7 The SETVGA Utility

Chapter 5 Installing Options

5-1 Optional Function Packs
5-2 Additional Memory
5-4 Math Coprocessor
5-6 External Drives
5-7 External Keyboard (or External Keypad)
5-8 External Monitors
5-9 Printers
5-10 Mice

Chapter 6 Travel, Maintenance and Troubleshooting

6-1 Travel Preparations
6-1 Travel Precautions
6-2 Maintenance
6-3 Taking Care of the Diskettes
6-4 Taking Care of the Hard Disk
6-5 Troubleshooting

Appendix A Specifications

Chapter 1

Hardware Description

Physical Appearance

Figures 1-1 and 1-2 show the physical appearances of the notebook computer when it is closed and when it is open.

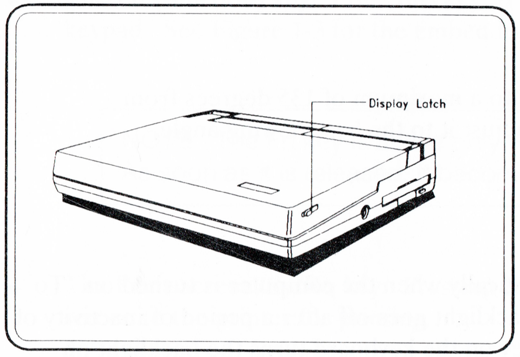


Figure 1-1. Physical Appearance (Closed)

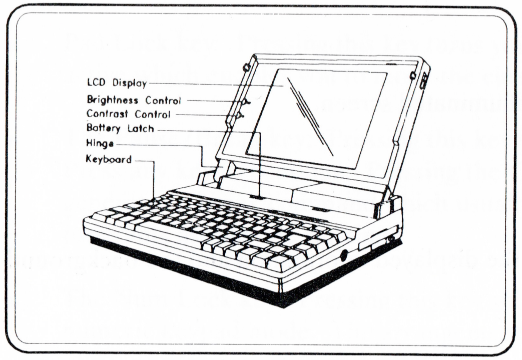


Figure 1-2. Physical Appearance (Open)

LCD Display Panel

Your computer displays text and graphics on a triple supertwist illuminated (LCD) with true black-on-white contrast. The computer can emulate IBM's video graphics array (VGA), and displays colors as 64 shades of gray.

Resolution

The screen displays a maximum resolution of 640 dots horizontally and 480 dots vertically.

Screen Angle

The LCD screen can be tilted to a maximum of 135 degrees from horizontal. You can tilt and adjust it to the best viewing angle.

Backlight

The backlight goes on automatically when the computer is turned on. To conserve battery power, the backlight goes off after a period of inactivity of the keyboard. Pressing any key on the keyboard turns the backlight on again.

Brightness Contrrol

Adjusts the brightness of the illuminated screen.

Contrast Control

Adjusts the contrast between the displayed information and the background for the best viewing condition.

The Battery Pack Latches

Two latches located immediately below the display panel securely locked the battery packs or expansion function packs. To remove the battery packs or expansion packs, push the latches to the right and gently slide the packs backward.

The Keyboard

The keyboard has 83 full-sized keys. Some special control keys are explained below:

- The Fn (function) key: Press this key to use the embedded numeric keypad. See Figure 1-3 for the embedded numeric keypad.

> NOTE: The Fn key is active only while it is being pressed. As soon as it is released, it becomes inactive.

- The Print Screen/SysRq key: Pressing this key sends data on the screen to the printer for printing.
- The Scroll Lock key: This key has no fixed function of its own, but has special functions in some application programs.
- Pad Lock key: Pressing this key turns your embedded keypad area active which enables you to move the cursors.
- The Pause/Break key: Pressing this key stops the system temporarily. Press any key to continue. Pressing the Ctrl-Break keys together generates a break command which usually halts commands or programs as they are running.
- The Num Lock key: Pressing this key shifts the keyboard to the numeric keypad mode. The arrangement of the keypad is similar to a

calculator keypad. Figure 1-3 shows the keyboard layout and the embedded numeric keypad.

To conserve power, the computer automatically turns off screen display after a period of inactivity.

Keyboard Layout

Figure 1-3 shows the layout of the computer keyboard with an embedded numeric keypad indicated.

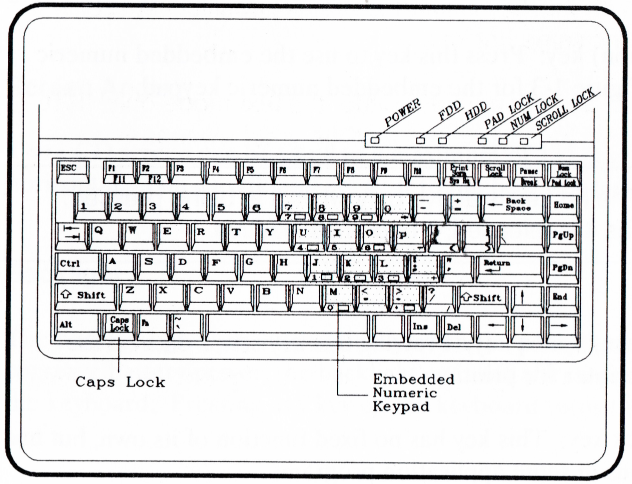


Figure 1-3. The Keyboard Layout (Embedded Numeric Keypad indicated)

Special Key Combinations (Hot Keys)

There are several key combinations for special functions:

Alt + right Shift + D = to toggle display to CRT/LCD.

Alt + right Shift + E = to enable Speed Down Timer.

Alt + right Shift + H = to show Hot Key Menu.

Alt + right Shift + L = to toggle to Enable/Disable LCD Sleep Timer.

Alt + right Shift + R = to toggle LCD to Reverse/Normal mode.

Alt + right Shift + U = to disable Speed Down Timer.

NOTE:

1. Certain applications may conflict with the special key combinations. We recommend you to press the left Shift key instead to prevent conflict caused by the same hot key.

2. Use the hot keys under the text mode only. Hot keys do not work under the graphics mode.

Indicators

There are six indicators on the right above the keyboard and an indicator on the Caps Lock key which light to show the state of power, drives and keyboard.

Power

Lights when the power is on. Blinks when battery is low or weak.

HDD

Lights when the fixed disk is being accessed.

FDD

Lights when the FDD unit is being accessed.

Pad Lock

Lights when the Pad Lock key is on.

Num Lock

Lights when the Num Lock key is on.

Scroll Lock

Lights when the Scroll Lock key is on.

Caps Lock

Lights when the Caps Lock key is on.

The Left Panel

The left panel on the computer contains the power button and the VGA-CRT connector.

Figure 1-4 shows the locations of the power button and the VGA-CRT connector.

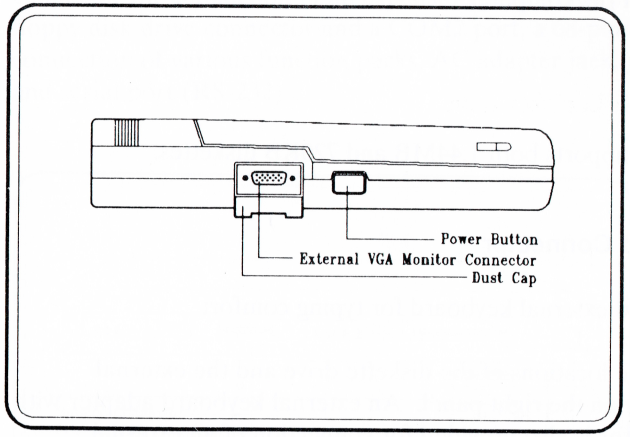


Figure 1-4. The Left Panel

Power Button

Turns the power to the computer on and off for both battery powered and AC operation.

External Monitor Connector

Connects your external VGA monitor here (labeled CRT).

The Right Panel

The 3.5-inch diskette drive and the external keyboard connector are located on the right panel of the computer.

Diskette Drive

The diskette drive supports both 1.44MB and 720KB diskettes.

External Keyboard Connector

Connects a full-sized external keyboard for typing comfort.

Figure 1-5 shows the locations of the diskette drive and the external keyboard connector on the right panel. An external keyboard adapter with a mini-DIN connector is also provided for connection of an external keyboard to your computer.

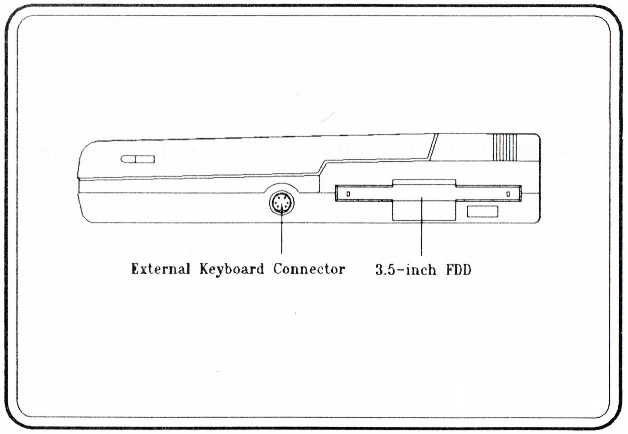


Figure 1-5. The Right Panel

The Rear Panel

The rear panel of the computer has two connectors, two expansion compartments, and an AC adapter jack. The two connectors are located behind a dust cap. Open the dust cap to use the connnectors, and close it when the connectors are not in use.

Figure 1-6 shows the locations of the expansion compartments, a 30-pin connector for connection of an expansion pack which provides an external floppy disk drive connector and a COM2 port, a 68-pin bus connector for connection of various function packs, AC adapter jack, parallel printer port, and serial port (RS-232)

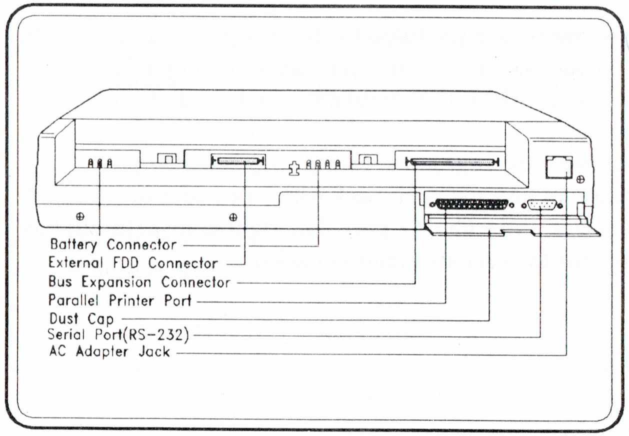


Figure 1-6. The Rear Panel

Parallel (Printer) Port

Connects a printer or other device which uses a standard Centronics parallel interface to the computer. The cable from the printer or other device must terminate in a 25-pin IBM-PC type male connector to connect to this port.

Serial (RS-232C) Port

Connects I/O devices such as a serial printer or mouse. The cable which connects to this port must terminate in a 9-pin female IBM-AT type connector.

AC Adapter Jack

The AC adapter plugs into this jack for recharging the battery or supplying AC power to the computer.

Expansion Compartment

Two expansion compartments are provided for battery packs, and a number of optional function packs such as modem pack, fax/modem pack, fax/scanner pack, Ethernet pack, IBM 3270 emulation pack, and others.

The left compartment (with the rear panel facing you) has a 30-pin connector for connection of an expansion pack which provides an external floppy disk drive connector and a COM2 port. The right compartment has a 68-pin bus connector for the various function packs.

Chapter 2

Getting Started

Unpacking

Unpack all items in the printed box and save the packing materials in case you ever need to move the system. If any of the following items are damaged or missing, contact your dealer immediately.

- The system unit and this User's Guide
- AC adapter and power cord
- NiCad battery pack
- Utility diskette with the SETMODE and SETVGA utilities
- External keyboard adapter
- Carrying bag

Also check the optional accessories, if any:

- MS-DOS Version 5.0
- Windows Version 3.1
- 83S87-25KP math coprocessor
- ZIP DRAMs
- Additional NiCad battery packs,fax/modem pack, fax/scanner pack, Ethernet pack, IBM 3270 emulation pack, others

Setting Up the System

Follow these steps to set up the system:

1. Install the battery packs. Do this by gently sliding the packs into the expansion compartments in the rear panel.
2. Connect the AC adapter to the computer and a power outlet. (Read section on connecting the AC adapter in this chapter.)
3. Slide the latches on the display panel toward the front and gently lift up the screen. Tilt the screen to a maximum of 135 degrees or to a desired angle for viewing comfort.
4. Insert the MS-DOS Install diskette into drive A.
5. Turn on the power to start up the system.
6. When A> appears, enter the FDISK command to partition the fixed disk and then use the format command to format the fixed disk. (Read the following section on formatting the fixed disk.)
7. After you have finished formatting the fixed disk, continue to install the MS-DOS 5.0. Refer to MS-DOS User's Guide, Chapter 3, "Getting Started" for installation.
8. Press the power button on the left panel to turn on power to the system.

Formatting the Fixed Disk

The DOS FDISK on the Install diskette is used to create, change, or erase the DOS partition.

To format the hard disk, proceed as follows:

1. Insert the DOS Install diskette in floppy disk drive A.
2. Turn on the power to the system.
3. When the system has started up and the DOS prompt A> appears, enter the FDISK command and press the Enter key. The following display appears:

```
MS-DOS Version x.xx
Fixed Disk Setup Program
(C) Copyright Microsoft Corp. 1983, 1988

FDISK Options

Current fixed disk drive:  1

Choose one of the following:

1.      Create DOS partition or Logical DOS Drive
2.      Set active partition
3.      Delete DOS Partition or Logical DOS Drive
4.      Display partition information


Enter:  [1]



Press Esc to exit FDISK
```

4. Press 1 and the Enter key, then the display will change to the following:

```
Create DOS Partition or Logical DOS Drive


Current fixed disk drive:  1

Choose one of the following:

1.      Create Primary DOS Partition
2.      Create Extended DOS Partition
3.      Create Logical DOS Drive(s) in the Extended DOS Partition


Enter choice:  [1]




Press Esc to return to FDISK Options
```

```
        Create Primary DOS Partition

Current fixed disk drive:  1

Do you wish to use the maximum available size for a primary DOS
Partition and make the partition active (Y/N) ............. ? [Y]





Press Esc to return to FDISK Options
```

```
System will now restart

Insert DOS Install diskette in drive A:
Press any key when ready ......
```

5. After the DOS prompt (A>) appears, execute the FORMAT command to match the hard disk format with that of DOS. The hard disk is referred to as drive C.

Example:

```
A:\>format C:/s
```

The following message appears:

```


WARNING, ALL DATA ON NON-REMOVABLE DISK DRIVE C:
WILL BE LOST!
Proceed with Format (Y/N)? y
```

Press Y to format the fixed disk. You will then see the following screen.

```
Format complete
System transferred

Volume label (11 characters, ENTER for none)?

          21309440          bytes total disk space
          112640            bytes used by system
          21196800          bytes available on disk

          2048      bytes in each allocation unit
          10350     allocation units available on disk

Volume Serial Number is 1877-1CE0
A:\>
```

When formatting is complete, the available hard disk memory capacity is displayed and the system returns to DOS.

6. To confirm that the hard disk has been properly formatted, remove the diskette from the floppy disk drive, and turn the computer off and then on again. Or press Ctrl-Alt-Del simultaneously to warm boot the system. DOS will start up automatically from the hard disk, and DOS prompt C> appears.

Connecting the AC Adapter

WARNING! Use only the AC adapter supplied with your computer. Use of another adapter could damage your system. Also, do not connect your adapter to other devices as it is designed specifically for your system.

The AC adapter converts alternating current (AC) to direct current (DC). It automatically determines line voltage in the range of 100 to 240 VAC. When connected to the system unit, the AC adapter automatically charges the battery pack. Therefore, when using the computer for the first time, use the AC adapter to power up the system and at the same time, charge the battery.

There are three indicators (Power, Charge 1 and Charge 2) on the AC adapter. The power indicator lights when the AC adapter is connected. Charge 1 and charge 2 light while the battery is being charged. The light goes off when the battery is fully charged.

To connect the AC adapter, follow these steps.

1. Attach one factory-supplied noise filter core to each end of the AC adapter cable connected to this computer. Make sure that (for the core close to the computer) the cable makes one turn and goes through the core twice and that the noise filter core is properly snapped in place.

2. Plug the female end of the supplied AC cord into the connector socket on the AC adapter body.

3. Plug the cord from the AC adapter into the jack on the rear panel of the computer.

4. Plug the male end of the AC cord into a grounded outlet.

Figure 2-1 shows connection of the AC Adapter.

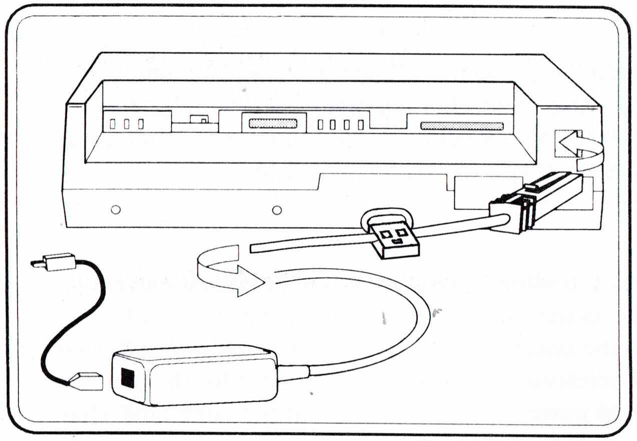


Figure 2-1. Connecting the AC Adapter

You may now let the battery charge or turn on your computer and operate it on AC power.

> NOTE: When using the computer for the first time, we recommend that the first thing you do is to fully charge the battery.

Running Programs on the Computer

With full desktop PC power, your computer can run most software packages without any problems. However, the standard configuration of the computer may have some limitations with regard to memory, speed, application programs, and power-saving features.

CPU Speed

Your computer has been set at a default speed of 25MHz 0 wait state.

Chapter 3

Modifying Values of the Setup Program

This chapter tells you how to configure your system with the Setup program. Setup tells the system what hardware devices are installed. If the Setup configuration is inconsistent with the hardware, the system shows error messages during the power-on self-test.

When to Run Setup

Run setup under any of the following conditions:

1. Setting up the system for the first time.
2. Hardware error messages appearing during the self-tests.
3. Changing the current date or time.
4. Installing an external diskette drive or changing the type of hard disk.
5. Changing the display type.

Displaying the Setup Main Menu

To display the setup main menu, you must first boot your system. When the following message appears,

"Press <DEL> if you want to run SETUP/DIAGS"

press the Del key to load the Setup program. The following screen appears:

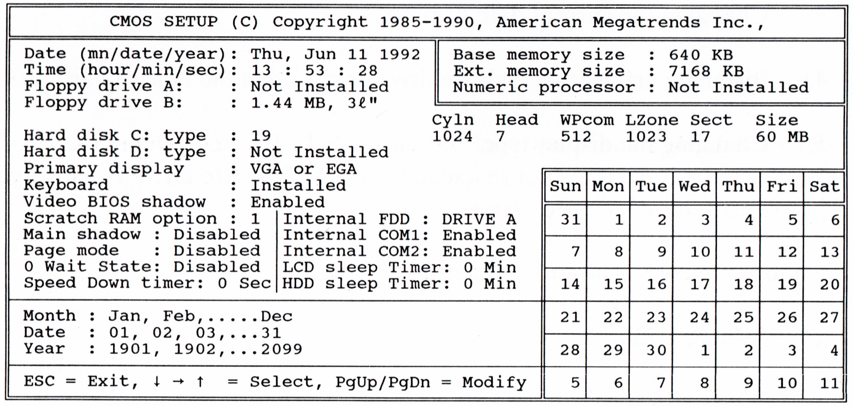
EXIT FOR BOOT

RUN CMOS SETUP

RUN DIAGS

Use the down arrow key to move the cursor to 'RUN CMOS SETUP' and press Enter.

Figure 3-1 shows the CMOS setup screen as follows:



```
           CMOS SETUP (C) Copyright 1985-1990, American Megatrends Inc.,

 Date (mn/date/year): Thu, Jun 11 1992   Base memory size   : 640 KB
 Time (hour/min/sec): 13 : 53 : 28       Ext. memory size   : 7168 KB
 Floppy drive A:    : Not Installed      Numeric processor : Not Installed
 Floppy drive B:    : 1.44 MB, 3ℓ"
                                        Cyln  Head  WPcom LZone Sect  Size
 Hard disk C: type  : 19                1024  7     512   1023  17    60 MB
 Hard disk D: type  : Not Installed
 Primary display    : VGA or EGA
 Keyboard           : Installed                  Sun Mon Tue Wed Thu Fri Sat
 Video BIOS shadow  : Enabled
 Scratch RAM option : 1 |Internal FDD : DRIVE A   31   1   2   3   4   5   6
 Main shadow : Disabled |Internal COM1: Enabled
 Page mode   : Disabled |Internal COM2: Enabled    7   8   9  10  11  12  13
 0 Wait State: Disabled |LCD sleep Timer: 0 Min
 Speed Down timer: 0 Sec|HDD sleep Timer: 0 Min   14  15  16  17  18  19  20

 Month : Jan, Feb,.....Dec                        21  22  23  24  25  26  27
 Date  : 01, 02, 03,...31
 Year  : 1901, 1902,...2099                       28  29  30   1   2   3   4

 ESC = Exit, ↓ → ↑  = Select, PgUp/PgDn = Modify   5   6   7   8   9  10  11
```

Figure 3-1. The CMOS Setup Screen

Making Selections

Use the right arrow key or the down arrow key to move forward through each field. Use the left arrow key or the up arrow key to move backward through each field.

Use the PgDn or the PgUp key to select values you want to modify.

Setting the Date and Time

The real-time clock (RTC) keeps the system date and time even when the system is turned off. Select the date and time as needed.

Calendar

A calender is shown on the right bottom of the screen. The current day blinks.

Setting the Disk Drives

The Diskette Drives

Diskette Drive A must have the setting 1.44MB, 3.5-inch. Default setting for Diskette Drive B is 'Not Installed.' Change Diskette Drive B only if you install an external diskette drive.

Choose the correct size for Diskette Drive B:

- 360KB, 5.25 inch
- 1.2MB, 5.25 inch
- 720KB, 3.5 inch
- 1.44MB, 3.5 inch

The Hard Disk Drive

The standard drive type for Hard Disk C is type 19 (for 60MB hard disk). Do not change the drive type unless the hard disk drive is replaced. If you have a 40MB hard disk, select type 17. Select type 47 if you have an 80MB hard disk.

Your computer can house only one hard disk drive; therefore, Hard Disk Drive D is 'Not Installed'.

Memory Configuration

The system detects the amount of base memory, extended memory, and total memory, and then displays the values in the corresponding Setup parameters. The default memory configuration is as follows.

Base Memory	640 KB
Extended Memory	1024 KB

Numeric Coprocessor

Your system can detect whether a numeric coprocessor is installed or not, making this Setup parameter a no-entry parameter. By default, the coprocessor is 'Not Installed'. If you install a numeric coprocessor, then this Setup parameter displays 'Installed'.

Primary Display

The primary display specifies the display mode (VGA or EGA) of your video controller. The system detects the type of video controller installed and displays the type in the Setup parameter.

Keyboard

Default is 'Installed'.

Video BIOS Shadow

The Video BIOS (included in the BIOS routines) normally resides in read-only-memory (ROM). For faster processing, you can switch these routines to a portion in RAM that is normally not used in DOS applications. By default, video BIOS Shadow is 'Enable'.

Scratch RAM option

When you move the cursor to this field, the following message appears in the instruction box near the bottom of the screen.

'If required, BIOS will use 256 bytes of RAM

(1) Using BIOS stack area at 0030:0000

(2) Reducing base memory size by 1KB'

Select (1) or (2) as desired and press Enter.

Main BIOS Shadow

Enabling this field will move system BIOS from ROM to RAM, thereby quickening system BIOS access and startup.

Page Mode Option

Default is 'Enable'.

0 Wait State Option

To run programs at a higher system speed, set the 0 wait state option to 'Enable'.

Speed Down Timer

This field is set to lower the CPU speed to 4MHz after a period of no input from the keyboard, no access to the disk drives, or the inactivity of the screen. Possible settings are 0, 2, 4, 6, 8, 10, 12, or 14 seconds. The setting of 0 sec is to disable this feature.

Internal FDD

You can assign Drive A or Drive B for this parameter. If you set the internal FDD to A, then the external floppy disk drive will be set to B while it is installed. If that is the case, change the setting, 'Not Installed', of the 'Floppy drive B'.

LCD Sleep Timer

If there is no input from the keyboard within the period specified in this field, the LCD screen will go into the sleep mode, that is, the LCD will be turned off. You can select the timeout as needed from 0 to 7 minutes. The setting of 0 minute will disable this feature.

HDD Sleep Timer

The HDD can be set to go into the sleep mode after a certain idle period, that is, no accesses to the hard disk. You can select the timeout as needed from 0 to 7 minutes. The setting of 0 minute will disable this feature.

NOTE:

1. The 'Speed Down Timer' and the 'HDD Sleep Timer' will not be in effect when the computer is operating under AC power. As soon as the power source is switched to battery power, the system will enable these two features.

2. Since the sleep mode does not work under OS/2 , it is recommended that you disable this mode in the BIOS Setup, prior to using aforementioned environments.

Modify values of other items as needed by pressing the PgUp or PgDn key.

After you have finished modifying values of the CMOS setup, press ESC to exit. The screen displays the following message:

> 'Write data into CMOS and exit (Y/N)?'

Press Y or N as needed and then Enter to exit to DOS.

Chapter 4

Power Management and Utilities

Charging the Battery

We recommend that you fully charge the supplied battery packs before using the system. Connecting the AC adapter automatically cuts off the battery packs and recharges the battery. A completely depleted battery gets fully charged in approximately eight hours.

The system runs on battery power when the AC adapter is disconnected. Two fully charged battery packs last from three to five hours under normal operating conditions.

A percentage breakdown of the battery consumption of each component under normal conditions is listed below for your reference.

Component	Power Consumption (%)
LCD backlight	41%
CPU/Memory access	27%
Fixed disk drive	18%
Diskette drive	9%
Display	5%
Keyboard	1%

You do not have to worry about battery power as long as the AC adapter is in use. And you do not have to worry about overcharging either since a thermostat is built in the battery pack to prevent it.

The life cycle of your battery packs is about 500 times. After recharging your battery over 500 times, it will degrade and unable for a full charge.

Low (Weak) Battery Conditions

When the battery packs run low you are alerted by intermittent beeping sounds and blinking LED indicators. As soon as you are alerted of a low or weak battery condition, you should take immediate action to save your data and restore fully power to the computer.

AC Power Available

When you have immediate access to the AC adapter and AC power, follow these steps:

1. Save your data.
2. Connect the AC adapter to the computer and to an AC outlet to begin operating under AC power and recharging the battery.
3. Resume work.

Charged Battery Pack Available

When you have access to a spare charged battery pack, follow these steps:

1 Save your data.

2 Exit the application.

3. Turn off the computer.

4. Replace the battery pack.

5. Turn on the computer and resume work.

AC Power or Charged Battery Pack Unavailable

When you do not have immediate access to AC power or a charged battery pack, follow these steps:

1. Save your data.
2. Exit the application.
3. Turn off the computer until you can connect the AC adapter to operate under external power and recharge the battery.

CAUTION:

1. Battery may explode if disposed of in the fire. Disposal of a battery pack should be done in accordance with local regulations.
2. Metal objects can damage the battery pack and the connectors in the battery compartment. To prevent damage to the battery pack and computer, keep metal objects away from the connectors and foreign objects out of the battery compartment.

Power Management

This section describes the power-saving features offered by this system.

LCD Backlight

The backlight turns off automatically during battery weak. It will also turn off after a period of inactivity of the keyboard.

Hard Disk Drive

To extend battery life, the hard disk motor turns off automatically after a certain period of inactivity, that is, no accesses to the hard disk.

Keyboard

The keyboard enters the sleep mode automatically after a period of inactivity. Pressing any key reactivates the keyboard again.

Utilities

The Utility Program diskette includes:

SETMODE

SETVGA

Loading the Utilities

All of the utility files located on the Utility program diskette should be copied into the root directory of your hard disk or to a corresponding directory within your DOS directory path. If you do this, the Utility program diskette in drive A can be ignored for the remainder of the procedures described in this chapter.

> CAUTION: If ANSI.SYS is installed in the CONFIG.SYS file as part of your operating system, it has the effect of allowing the system to recognize only 40x25 or 80x25 text modes. Therefore, in order to use the VGA board's extended capabilities (e.g. extended text mode, high-resolution graphics drivers, etc.) ANSI.SYS must NOT be installed in your operating system.

The SETMODE Utility

SETMODE is a Terminate-and-Stay-Resident(TSR) program that provides the ability to set the number of rows and columns of characters displayed in text modes. SETMODE is intended for use on standard IBM VGA, EGA, CGA and monochrome monitors. Extended text modes are NOT supported on flat-panel displays. The extended text mode selection is dependent upon the monitor (CRT) attached to your computer (see Table 4-1).

MODE	MONITOR VGA	EGA	CGA	MONO
80x25	x	x	x	x
132x25	x	x	x	x
132x50	x			

Table 4-1. Text Modes Supported

NOTE: Only the '80x25' mode is suitable for LCD.

Usage

SETMODE [Columns][,Rows]

[Columns]	Optional parameter specifying the number of columns to be displayed. The parameters can be one of the following:

80	Display 80 Columns of Characters.
132	Display 132 Columns of Characters.

[,Rows]	Optional parameter specifying the number of rows of characters to be displayed. The parameters can be one of the following:

25	Display 25 Rows of Characters.
50	Display 50 Rows of Characters.

[Blank]	No parameters, display help.

Examples

SETMODE 132,50

This sets the display to 132 columns by 50 rows.

SETMODE

This causes a help menu to be displayed.

The SETVGA Utility

The SETVGA utility program is used to enable emulation of an EGA, CGA, MDA or Hercules display. SETVGA is used to disable an emulation mode and enable VGA operation. Emulation mode selection is dependent upon the monitor (CRT) attached to your computer (see Table 4-2).

EMULATION MODE	DISPLAY VGA	EGA	CGA	MDA
CGA	x	x	x	
MDA	x			x
HERCULES	x			x
EGA	x	x		
EGAM	x			x
VGA	x			

Table 4-2. Emulation Modes Supported

Usage

SETVGA [MODE][BOOT]

[Mode]	Optional emulation mode selection parameter. This parameter must be one of the following:

CGA	Enable CGA Emulation.
MDA	Enable Monochrome Emulation.
HERC	Enable Hercules Emulation (Half Mode).
HERCF	Enable Hercules Emulation (Full Mode).
EGA	Enable EGA Emulation (Color Mode).
EGAM	Enable EGA Emulation (Monochrome Mode).
VGA	Enable VGA Operation.
[Boot]	Perform warm boot in selected emulation mode.
[Blank]	No Parameters, display help.

Examples

```
SETVGA CGA BOOT
```

This enables emulation of a CGA display adapter if a VGA, EGA or CGA monitor is attached and causes the system to perform a warm boot in CGA mode.

```
SETVGA
```

This causes a help menu to be displayed.

Chapter 5

Installing Options

This chapter shows you how to install some optional peripherals. Remember to run Setup after installing the DRAMs or an external diskette drive.

Optional Function Packs

To install the optional packs such as a modem pack, fax/scanner pack, fax/modem pack, etc., proceed as follows.

1. Turn off the system power.

2. Remove the left battery pack. See Figure 5-1.

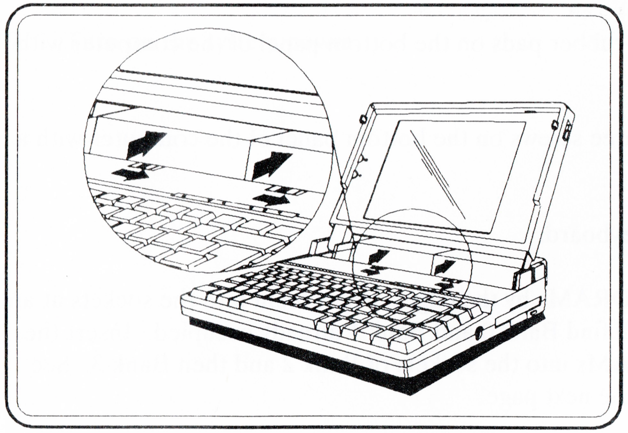


Figure 5-1. Removing the Battery Pack

3. Gently slide your desired function pack into the expansion compartment until you hear a click sound.

4. Read the relevant manual of the specific function pack for operation.

NOTE: It is recommended that you use the AC adapter if expansion packs are used.

Additional Memory

This system has 2MB of RAM memory, expandable to 4/6/8MB, with four slots for ZIP DRAMs, separated into banks 0, 1, 2, and 3.

To install additional ZIP DRAMs, follow the steps below:

1. Turn off the system power.

2. Close the display panel and lock it in place.

3. Remove three rubber pads on the bottom panel of the computer with your fingers.

4. Remove the three screws on the bottom panel of the computer with a screw driver.

5. Remove the keyboard.

6. Hold the ZIP DRAMs by the edges, insert them into the sockets at an angle. You will find Bank 0 and Bank 1 already occupied. Insert the additional DRAMs into the sockets of Bank 2 and then Bank 3. See Figure 5-2 on the next page.

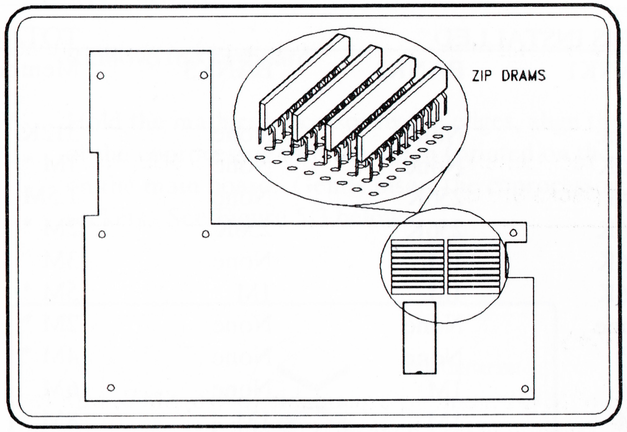


Figure 5-2. Inserting a ZIP DRAM

7. Reinstall the keyboard and the three screws on the bottom panel.

8. Reinsert the three rubber pads on the bottom panel of the computer.

9. Turn on the system power.

Table 5-1. Memory Map

TYPES OF DRAMS INSTALLED				TOTAL
BANK0	BANK1	BANK2	BANK3	Memory
256K	None	None	None	512K
256K	256K	None	None	1M *
256K	256k	256K	None	1.5M
256K	256K	256K	256K	2M *
256K	256K	1M	None	3M
256K	256K	1M	1M	5M *
1M	None	None	None	2M *
1M	1M	None	None	4M *
1M	1M	1M	None	6M
1M	1M	1M	1M	8M *
1M	1M	256K	None	4.5M
1M	1M	256K	256K	5M *

* Suggested types.

Math Coprocessor

An 80387SX math coprocessor can be added to your system to speed up processing and improve throughput of calulations with application programs that support a math coprocessor. The recommended coprocessor is the Cyrix CX-83S87-25KP.

To install the CX-83S87-25KP math coprocessor, proceed as follows.

1. Turn off the system power.

2. Close the display panel and lock it in place.

3. Remove the three rubber pads on the bottom panel of the computer with your fingers.

4. Remove the three screws on the bottom panel of the computer with a screw driver.

5. Remove the keyboard.

6. Hold the math coprocessor by the edges, align the notch and the legs of the coprocessor with the notch (printed on the board) and sockets on the main board. Gently insert the coprocessor legs into the sockets. See Figure 5-3 below.

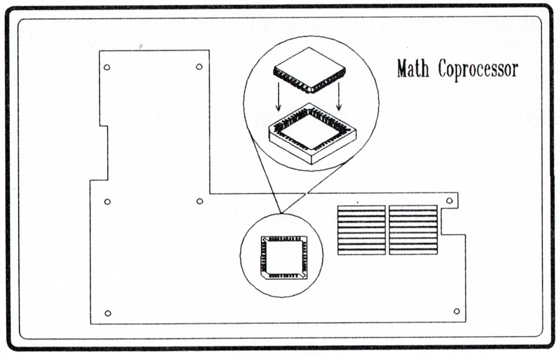


Figure 5-3. Inserting the Math Coprocessor

NOTE: Apply only enough force to remove or insert the ZIP DRAMs or the math coprocessor. Excessive force may damage the legs of the DRAM or coprocessor, or the bank sockets.

7. Reinstall the keyboard and the three screws on the bottom panel.

8. Reinsert the three rubber pads on the bottom panel of the computer.

9. Turn on the system power.

External Drives

The system offers an external 5.25-inch diskette drive as drive B. To install the external diskette drive, proceed as follows.

1. Turn off the system power.
2. Remove the right battery pack.
3. Close the display panel and lock it in place.
4. Gently slide the external drive connector pack into the right expansion compartment.
5. Connect the external disk drive cable to the right expansion compartment connector.
6. Open the display panel. Turn on the system power.
7. Run Setup to change the configuration.

External Keyboard (or External Keypad)

The standard built-in keyboard supports all the key functions of the IBM 101/102-key Enhanced Keyboard layout. In addition, you can connect a full-sized keyboard to the computer. The keyboard cable from the external keyboard must have a 6-pin mini-DIN connector. An AT-compatible keyboard can be used with your computer.

To install an external keyboard, proceed as follows.

1. Turn off the system power.
2. Connect the external keyboard (or keypad) cable to the external keyboard adapter to the female connector of the factory-provided external keyboard adapter (see Figure 5-4). Then plug the male connector of the external keyboard adapter to the keyboard connector of your computer.

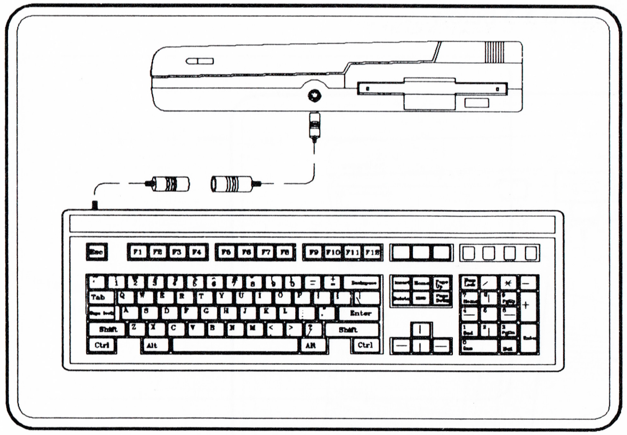


Figure 5-4. Connecting an External Keyboard

3. Turn on the system to enable the keyboard (or keypad).

External Monitors

You can connect all VGA-CRT monitors to the computer via a 15-pin analog connector.

To connect an external monitor, proceed as follows.

1. Attach one noise filter core to the end of the monitor cable close to the computer. Make sure that the cable makes one turn and goes through the core twice and that the noise filter core is properly snapped in place.
2. Turn off power to the system and to the external monitor.
3. Press open the dust cap on the left panel to expose the 15-pin analog connector.
4. Connect the 15-pin male analog connector of the external monitor cable to the 15-pin female analog connector on the left panel of the computer. See Figure 5-5 below.

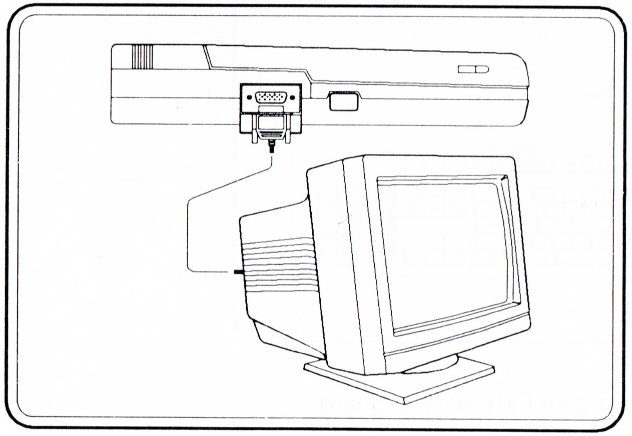


Figure 5-5. Connecting an External Monitor

4. Turn on power to the monitor, then turn on power to the system.

Printers

You can connect most industry-standard parallel printers to your computer. However, a separate printer driver is needed for your printer with each application program. Refer to the installation guide of your application program for instructions.

To connect a parallel printer, proceed as follows.

1. Turn off power to the system.
2. Press open the dust cap on the rear panel to expose the parallel port connector.
3. Connect the printer connector to the parallel port connector. See Figure 5-6 below.

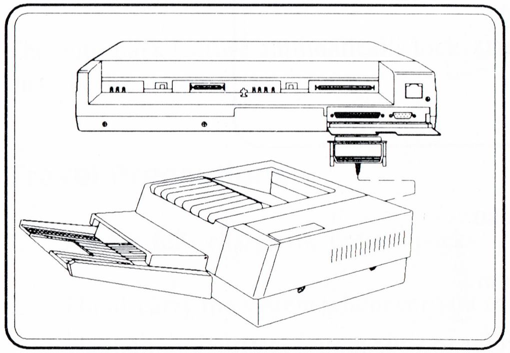


Figure 5-6. Connecting a Printer

4. Turn on power to the printer, then turn on power to the system .

Mice

To install a mouse, proceed as follows:

1. Turn off power to the system.
2. Press open the dust cap on the rear panel to expose the RS-232 serial port connector.
3. Connect the mouse connector to the serial port connector. See Figure 5-7 below.

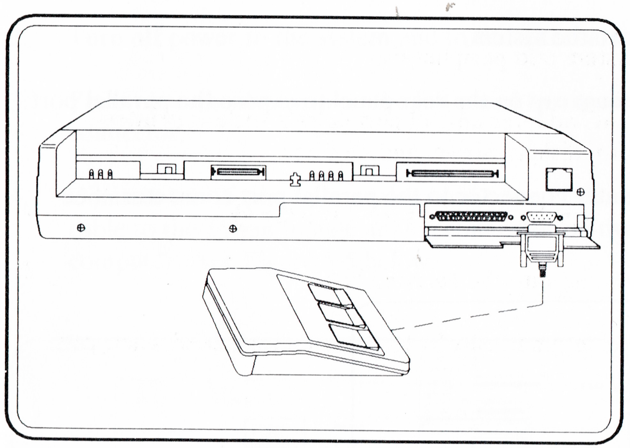


Figure 5-7. Connecting a Mouse

4. Turn on power to the system.
5. Install the mouse driver (refer to your mouse instruction manual).

Chapter 6

Travel, Maintenance and Troubleshooting

Travel Preparations

Improper preparations before transporting the system can damage the fixed disk or parts of the system itself. Do the following before moving the system.

1. Power off the system and peripherals.
2. Disconnect the AC adapter and all peripherals such as printers, external keyboard, diskette drive, and monitor.
3. Close the display panel and make sure it is latched.
4. Place the system unit into the carrying bag.

The auto park feature automatically locks the fixed disk head when you turn off the system.

Travel Precautions

1. Always fully charge the battery packs.
2. Hand-carry the system whenever you travel with it. Do not check it as luggage.
3. Prevent the system from bumping against any hard objects.

Maintenance

Though your computer requires little care, you can maintain its excellent condition and performance by following the guidelines below.

1. Keep your computer and AC adapter away from excessive moisture and extremes of heat and cold and magnetic fields.
2. Do not force the AC adapter power cord into a power outlet. The AC adapter uses a three-wire plug that only fits into a grounded power outlet. If the plug does not fit into an outlet, contact a professional electrician.
3. When using external power, operate the computer with a battery pack installed so that a full battery charge is maintained.
4. Keep liquids away from the computer.
5. To avoid damage to the display, do not place external devices or other objects on top of the computer when it is closed.
6. When the external device connectors are not in use, keep the dust caps closed to prevent static electricity and damage to the interfaces.
7. Occasionally wipe the exterior with a soft, damp cloth.
8. Occasionally clean the display with a soft cloth moistened with water. However, NEVER use a cloth moistened with soap or window cleaner to clean the display.
9. Use the screen display power-saving feature regularly to extend the LCD life cycle.

Taking Care of the Diskettes

1. Make backup copies of diskettes that contain important data or program files.
2. Keep diskettes away from magnetic fields and extreme heat.
3. Do not open the diskette drive latch when the drive light is on.
4. Write-protect the diskettes to prevent important files from being erased or overwritten by pushing the write-protect switch to the WRITE-PROTECT position.

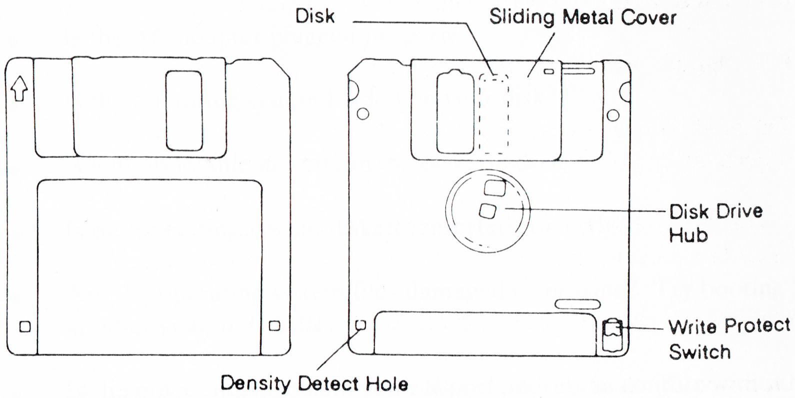


Figure 6-1. 3.5-inch Diskette Write-Protect Switch

Taking Care of the Hard Disk

The hard disk in your computer has been specially designed to withstand the rigors of travel. The hard disk heads automatically park themselves when the computer is turned off. However, it is still a precision device and careful handling prolongs its life. Follow these guidelines to get the most out of the hard disk's performance.

- Never move the computer when the hard disk is being accessed.
- Avoid strong vibration or sudden shocks during transportation.
- Always backup all programs and data stored on your hard disk.

Troubleshooting

This section suggests easy solutions to some commonly occured problems. Solutions to more serious problems require opening up the system. Contact your dealer to solve the problem. Do not attempt to open up the system yourself.

Problems Checklist

If the system does not start or boot

- Are you running on battery power? Check the battery charge level. The battery may be low and unable to power up the system.
- Is the AC adapter plugged properly?
- Is the operating system loaded on your disk?
- Is a nonbootable diskette in the diskette drive?
- Is the operating system diskette inserted correctly?
- Are the operating system files damaged or missing? Try booting from another system diskette.
- Is the power management control port address in conflict with other I/O port addresses in the expansion pack port?

If nothing appears on the screen

- Are the screen brightness and contrast controls in the normal condition?
- Is the screen display power-saving feature on? Press any key to turn the display back on.

If the serial port does not work

- Is the mouse driver activated?

If the printer does not print

- Is there any conflict between the parallel ports selected?

If the external CRT does not work

- Is the CRT cable properly plugged?
- Are the CRT brightness and contrast controls in the right position?

Appendix A

Specifications

Component	Standard	Optional
Microprocessor	80386SX-25	
Coprocessor	Socket(PLCC)	83S87-25KP
CPU speed	25MHz	
System board memory	2MB	4/6/8MB
ROM,BIOS	128K x 8	
CMOS RAM	64bytes, battery backup	
Data storage	One 2.5-inch, 60MB fixed disk drive One 3.5-inch, 1.44MB diskette drive	One 2.5-inch 80MB hard disk drive One 5.25-inch 1.2MB/360KB external diskette drive One 3.5-inch 1.44MB/720KB diskette drive

Component	Standard	Optional
Video display	640 x 480 LCD screen VGA-compatible backward with EGA, CGA, MGA and Hercules)	800 x 600 External VGA or multi-frequency CRT monitor
Keyboard	83-key	101/102 key 17-key numeric keypad
I/O Ports	One 9-pin serial port One 25-pin parallel port, One 15-pin external monitor connector, One 30-pin connector for connection of an expansion pack which provides an external FDD connector and a COM2 port, One 68-pin expansion bus connector, One 6-pin mini DIN keyboard connector	Serial mouse
Power input	100 ~ 240 VAC, 50/60Hz auto-sensing AC adapter (12 VDC), NiCad battery pack with overcharge protection	Extra battery
Operating system	MS-DOS V5.0	
Software	SETMODE utility SETVGA utility	Windows 3.1
Weight	3.1kgs or 6.9lbs	
Dimensions	310 x 242 x 44-54 (mm) 12.2 x 9.5 x 1.7-2.1 (in)	

Specifications subject to change without notice.